Date: Tue, 1 Nov 1994 11:42:32 -0500 (EST)
From: "Matthew S. Meselson" <msm@isr.harvard.edu>
Subject: [Adjuvancy -- anthrax
To: Professor Joshua LEDERBERG <jsl@ROCKVAX.ROCKEFELLER.EDU>

Josh--
I have no specific information on synergism between respiritory infections and susceptability to inhalation anthrax.

Regarding adjuvant effects, I have several references, some claiming reductions of LD50 in experimental animals as large as 100 and more. Detergent in the aerosol (but not if aerosolized simultaneously but separately), chromate and chlorine gas are among the adjuvants for which I have journal articles.

On another tack, cold air is said to increase susceptability to respiratory infection in livestock. The data I have on this is poor.

Experimental measurements of LD50 are done at room temperature and an attempt is made to use healthy animals--so our LD50 values may not be appropriate to a population in poor health breathing cold or dirty air. And even under controlled conditions there is a baffling difference between rhesus LD50 values measured under rather well controlled conditions. Some of this is reflected in a table I have mailed to you.

We did not find evidence of an unusual prevalence of respiratory infections in April 79 but we did not look hard for it. Our interviews asked about previous health status but turned up nothing. Seven of the 35 men for whom we know occupation were welders and Grinberg and Smith (Galvaston) found a high proportion of respiratory macrophage disease: siderosis, asbestosis, silicosis, sarcoidosis, and alveolar proteinosis. Surely the best bet for learning more about predisposing factors, including respiratory infections, would be detailed study of the autopsy specimens that have been preserved. I think that appropriate controls could be found.

What all of this may mean is that the dose-response relations I have used to calculate source strength may understimate the susceptibility of the most vulnerable part of the exposed population. If so, the release could have been even less than the lower of the two extremes I give in the MS. I wish there were enough interest in these matters to bring a few knowedgable people together to do some brainstorming and maybe suggest some experiments.

~~What to do about Vil??~~

Best,

Matt.